Assessment of perimenopausal women's health

(Ocena zdrowia kobiet w okresie okołomenopauzalnym)

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Abstract Introduction. Perimenopause occurs in a woman's life between the reproductive period and the onset of aging. Hormonal changes occurring in a woman's body in the perimenopausal lead to symptoms of the climacteric syndrome. Symptoms can persist for several years, affecting the quality of life of a woman.
Aim of the study. The aim of the study was to assess the health of women in the perimenopausal period.
Materials and method. The study group consisted of 200 women. The research tools were: a self-developed questionnaire survey to assess the characteristics of the study group and "Women's Health Questionnaire" (WHQ). The results obtained were analysed statistically.
Conclusions. In the perimenopausal period, women experience increased vasomotor symptoms and feel physically unattractive. Quite often they also indicate problems with sleep, memory, and concentration. On the other hand, they are not depressed and do not feel anxiety or anxiety. Age, place of residence, education and marital status are the determinants of the health aspects of the study group.

Key words **-** health, perimenopause, menopause, symptoms

Streszczenie – Wstęp. Okres okołomenopauzalny występuje w życiu kobiety pomiędzy okresem reprodukcyjnym, a początkiem okresu starzenia się. Zmiany hormonalne zachodzące w organizmie kobiety w okresie okołomenopauzalnym prowadzą do wystąpienia objawów zespołu klimakterycznego. Objawy mogą utrzymywać się przez klika lat wywierając wpływ na jakość życia kobiety.
Cel pracy. Celem pracy była ocena zdrowia kobiet w okresie okołomenopauzalnym.
Materiał i metoda. Badaną grupę stanowiło 200 kobiet. Narzędziem badawczym był samodzielnie opracowany kwestionariusz ankiety do oceny charakterystyki badanej grupy oraz kwestionariusz „Zdrowie kobiet" (Women's Health Questionnaire- WHQ). Uzyskane wyniki badań poddano analizie statystycznej.
Wnioski. Kobiety w okresie okołomenopauzalnym odczuwają wzmożone objawy naczynioruchowe i czują się nieatrakcyjne fizycznie. Dość często wskazują również na problemy ze snem, kłopoty z pamięcią i koncentracją. Natomiast nie odczuwają raczej nastroju depresyjnego i nie mają poczucia niepokoju i lęku. Wiek, miejsce zamieszkania, wykształcenie i stan cywilny warunkują poszczególne aspekty zdrowia w grupie badanych kobiet.

Słowa kluczowe **-** zdrowie, okres okołomenopauzalny, menopauza, objawy.

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I. INTRODUCTION

Perimenopause period, also referred to as perimenopause, is found in a woman's life between reproductive and early onset [1]. According to the World Health Organization (WHO), it is a period of 2 to 8 years before the last monthly bleeding and one year after its occurrence.

At the beginning of this period, WHO recognizes the occurrence of endocrine, biological, or clinical changes associated with menopause. Brudkiewicz [2] states that this is a natural biological process in which oestrogen production is reduced and then completely stopped. As a consequence, this leads to an increase in the number of cycles without a hypothyroidism, and finally the physiological disappearance of the menstrual period. Hormonal changes occurring in the perimenopausal woman lead to symptoms of the climacteric syndrome. Symptoms may persist for several years exerting an influence on the quality of a woman's life [3].

The aim of the study was to assess the health of women in perimenopausal period.

II. MATERIALS AND METHODS

The study group consisted of 200 women. The research was carried out in Gynaecological clinic of Medical Centre Arion Górnik in Łęczna and at the Chodzki Medical Centre in Lublin, as well as education institutions in Lublin (kindergartens and schools) from December 2014 to January 2016. Participation in the research was voluntary and anonymous.

The research tools were a self-developed questionnaire survey to assess the characteristics of the study group as well as "Women's Health Questionnaire" (WHQ). Women's Health Questionnaire – WHQ – was developed in 1992 by M. Hunter [4]. It is used to evaluate 36 symptoms of mood, physical ailments, vasomotor and menstrual symptoms, and sexual experiences in women after 45 years of age. Depression (DEP), somatic symptoms (SOM), memory / concentration (MEM), vasomotor symptoms (VAS), anxiety (ANX), sexual behaviour (SEX), sleep disorders (SLE), menstrual disorders (MEN), attractiveness (ATT). The lower the result, the more positive the assessment of a given dimension is. The Polish adaptation of the WHQ questionnaire was made by Bielawska-Batorowicz [5].

The results obtained were analysed statistically. In the first place, descriptive statistics were analysed – mean, median, standard deviation, kurtosis and skewness. The next step was the series of significance tests and one-way analysis of variance (ANOVA). The significance of the results was considered at $p \leq 0.05$. The IBM SPSS Statistics 23 statistical package (PS IMAGO) was used for the calculations.

In the study group, the highest percentage was found in the surveyed people aged 45-50 years (51.8%), urban dwellers (76.4%), having higher education (45.5%), married (71.9%) and active professionally (90.5%).

III. RESULTS

Table 1 provides descriptive statistics on the health dimensions assessed by the WHQ questionnaire for perimenopausal women. Mean WHQ values were highest (VAS) - 0.54, ATT (0.52) and somatic symptoms (SOM) - 0.49. Somewhat better studied assessed their health in dimensions: sleep problems (SLE) - 0.46, memory / concentration (MEM) - 0.44, menstrual disorders (MEN) - 0.43 and sexual behaviour (SEX) - 0.38. The lowest mean values were obtained in WHQ depressive mood (DEP) domains - 0.31 and anxiety / anxiety (ANX) - 0.29.

Table 1. Descriptive statistics of health dimensions, assessed by the WHQ questionnaire, for women in the perimenopausal period

WHQ dimensions	N	M	Me	Min	Max	SD	Slant	Kurtosis
DEP	200	0.31	0.29	0.00	1.00	0.25	0.61	-0.57
SOM	200	0.49	0.43	0.00	1.00	0.26	0.02	-0.67
MEM	200	0.44	0.33	0.00	1.00	0.37	0.18	-1.33
VAS	200	0.54	0.50	0.00	1.00	0.43	-0.14	-1.64
ANX	200	0.29	0.25	0.00	1.00	0.27	0.82	0.18
SEX	171	0.38	0.33	0.00	1.00	0.34	0.44	-0.97
SLE	200	0.46	0.33	0.00	1.00	0.35	0.09	-1.23
MEN	200	0.43	0.50	0.00	1.00	0.30	0.25	-0.75
ATT	200	0.52	0.50	0.00	1.00	0.35	0.17	-0.99

Table 2 shows the interdependence between the individual dimensions of health and the age of the examined women. The t-test results show that the mean health scores among younger and older women differed statistically only in three out of nine WHQ dimensions. Based on the results, it was found that women aged 45-50 years had a better assessment of their vasomotor symptoms (M = 0.45) than

women aged 51-55 (M = 0.64). Regarding the health dimension of sexual behaviour, the younger women also scored significantly better (M = 0.33) than those in the older age group (M = 0.44). The last dimension in which significant differences were found were sleep problems. Indeed, their quality of sleep was rated higher by women aged 51-55 years (M = 0.51) compared to women aged 45-50 years (M = 0.41).

Table 2. Correlation between individual health dimensions and age of examined women in perimenopause

WHQ dimensions	Compared groups	N	M	SD	*t*	*p*
DEP	45-50 y.o.	103	0.30	0.25	-0.54	0.59
	51-55 y.o.	96	0.32	0.25		
SOM	45-50 y.o.	103	0.48	0.26	-0.70	0.49
	51-55 y.o.	96	0.51	0.27		
MEM	45-50 y.o.	103	0.40	0.35	-1.68	0.10+
	51-55 y.o.	96	0.49	0.39		
VAS	45-50 y.o.	103	0.45	0.43	-3.17	0.002**
	51-55 y.o.	96	0.64	0.41		
ANX	45-50 y.o.	103	0.30	0.27	0.35	0.72
	51-55 y.o.	96	0.28	0.28		
SEX	45-50 y.o.	93	0.33	0.33	-1.97	0.05*
	51-55 y.o.	77	0.44	0.36		
SLE	45-50 y.o.	103	0.41	0.36	-2.13	0.04*
	51-55 y.o.	96	0.51	0.35		
MEN	45-50 y.o.	103	0.46	0.29	1.49	0.14
	51-55 y.o.	96	0.40	0.32		
ATT	45-50 y.o.	103	0.55	0.36	1.49	0.14

Significance Levels: *** p <0.001; ** p <0.01; * P ≤ 0.05; + statistical trend

It can be observed that in the perimenopausal women, the health assessment for vasomotor symptoms, sexual behaviour, and sleep problems aggravates with age. In addition, the memory / concentration score was higher than the assumed significance level (≤0.05), but less than 0.1 (exactly 0.095), which can be interpreted as a statistical trend. This means that the result, though statistically insignificant, tends toward materiality and could be achieved under the influence of other conditions.

Table 3. Interdependence between individual health dimensions and the place of residence of examined women in perimenopause

WHQ dimensions	Compared groups: place of living	N	M	SD	*U*	*p*
DEP	City	152	0.26	0.22	2920.00	0.05*
	Village	47	0.34	0.23		
SOM	City	152	0.46	0.26	3081.00	0.15
	Village	47	0.52	0.26		
MEM	city o	152	0.40	0.35	3440.00	0.69
	Village	47	0.43	0.40		
VAS	City	152	0.52	0.43	3539.00	0.92
	Village	47	0.51	0.43		
ANX	City	152	0.28	0.27	3263.500	0.35
	Village	47	0.30	0.27		
SEX	City	127	0.36	0.35	2286.50	0.10+
	Village	43	0.44	0.31		
SLE	City	152	0.42	0.35	2988.00	0.08+
	Village	47	0.51	0.37		
MEN	City	152	0.42	0.31	3561.500	0.98
	Village	47	0.41	0.30		
ATT	City	152	0.49	0.34	3431.50	0.66

Significance Levels: *** p <0.001; ** p <0.01; * P ≤ 0.05; + - statistical trend

Table 3 shows the interdependence between the individual dimensions of health and the place of residence of the women surveyed. The Mann-Whitney U test, which is a nonparametric equivalent of the t test, was used to analyse the significance of differences between the women living in rural and urban areas. The use of the parametric test was not possible due to the failure to meet the equality assumption of the groups compared.

Table 4. Interdependence between individual dimensions of health and education of perimenopausal women

WHQ dimensions	Education	N	M	SD	F	*p*	Compared groups	Difference in averages	*P*
DEP	Primary/technical	24	0.35	0.26	4.20	0.02*	Primary/technical-secondary	-0.004	1.00
	Secondary	84	0.36	0.28			Primary/technical-secondary	0.10	0.27
	Higher	90	0.25	0.20			Secondary - higher	0.10	0.02*
SOM	Primary/technical	24	0.57	0.29	4.52	0.01*	Primary/technical-secondary	0.04	0.92
	Secondary	84	0.53	0.26			Primary/technical-higher	0.14	0.12
	Higher	90	0.43	0.24			Secondary - higher	0.10	0.03*
MEM	Primary/technical	24	0.54	0.37	1.18	0.31	Primary/technical-secondary	0.10	0.56
	Secondary	84	0.44	0.37			Primary/technical-higher	0.13	0.33
	Higher	90	0.41	0.37			Secondary - higher	0.03	0.94
VAS	Primary/technical	24	0.63	0.40	4.85	0.01**	Primary/technical-secondary	0.01	1.00
	Secondary	84	0.62	0.42			Primary/technical-higher	0.19	0.13
	Higher	90	0.43	0.43			Secondary - higher	0.19	0.01*
ANX	Primary/technical	24	0.39	0.37	2.58	0.08	Primary/technical-secondary	0.08	0.68
	Secondary	84	0.30	0.28			Primary/technical-higher	0.13	0.26
	Higher	90	0.25	0.22			Secondary - higher	0.05	0.43
SEX	Primary/technical	18	0.41	0.31	5.49	0.01**	Primary/technical-secondary	-0.06	0.85
	Secondary	69	0.47	0.34			Primary/technical-higher	0.12	0.42
	Higher	83	0.29	0.33			Secondary - higher	0.18	0.004**
SLE	Primary/technical	24	0.60	0.34	5.51	0.01**	Primary/technical-secondary	0.09	0.60
	Secondary	84	0.51	0.35			Primary/technical-higher	0.22	0.02*
	Higher	90	0.37	0.34			Secondary - higher	0.13	0.03*
MEN	Primary/technical	24	0.46	0.36	0.62	0.54	Primary/technical-secondary	0.01	0.99
	Secondary	84	0.44	0.29			Primary/technical-higher	0.06	0.85
	Higher	90	0.40	0.30			Secondary - higher	0.04	0.68
ATT	Primary/technical	24	0.50	0.33	1.93	0.15	Primary/technical-secondary	-0.07	0.74
	Secondary	84	0.57	0.37			Primary/technical-higher	0.03	0.96
	Higher	90	0.47	0.35			Secondary - higher	0.11	0.16

Significance Levels: *** p <0.001; ** p <0.01; * P ≤ 0.05; + - statistical trend

Table 5. Interdependence between individual health dimensions and marital status of examined women in perimenopause

WHQ dimensions	Marital status	N	M	SD	F	*p*	Compared groups	Difference in averages	*p*
DEP	single	23	0.32	0.26	2.81	0.04*	Single - married	0.06	0.91
							Married - widow	-0.13	0.63
	married	143	0.27	0.23			Widow - divorced	0.05	0.99
	widow	14	0.36	0.22			Married - widow	-0.19	0.10+
	divorced	19	0.27	0.21			Married - divorced	-0.01	1.00
							Widow - divorced	0.18	0.25
SOM	single	23	0.49	0.33	1.45	0.23	Single - married	0.02	1.00
							Married - widow	-0.10	0.78
	married	143	0.48	0.25			Widow - divorced	0.08	0.93
	widow	14	0.50	0.20			Married - widow	-0.13	0.20
	divorced	19	0.41	0.29			Married - divorced	0.06	0.94
							Widow - divorced	0.18	0.16
MEM	single	23	0.35	0.39	1.36	0.26	Single - married	0.01	1.00
							Married - widow	-0.06	0.99
	married	143	0.41	0.36			Widow - divorced	-0.18	0.59
	widow	14	0.36	0.22			Married - widow	-0.06	0.99
	divorced	19	0.27	0.21			Married - divorced	-0.18	0.28
							Widow - divorced	-0.12	0.92
VAS	single	23	0.56	0.48	0.16	0.92	Single - married	0.04	0.99
							Married - widow	-0.01	1.00
	married	143	0.51	0.43			Widow - divorced	-0.01	1.00
	widow	14	0.58	0.20			Married - widow	-0.05	0.99
	divorced	19	0.57	0.43			Married - divorced	-0.05	0.99
							Widow - divorced	-0.01	1.00
ANX	single	23	0.30	0.36	0.66	0.58	Single - married	-0.01	1.00
							Married - widow	-0.06	0.99
	married	143	0.29	0.27			Widow - divorced	0.07	0.94
	widow	14	0.25	0.22			Married - widow	-0.06	0.97
	divorced	19	0.25	0.20			Married - divorced	0.07	0.66
							Widow - divorced	0.13	0.64
SEX	single	23	0.38	0.40	0.52	0.67	Single - married	0.01	1.00
							Married - widow	0.04	1.00
	married	143	0.37	0.34			Widow - divorced	-0.11	0.95
	widow	14	0.33	0.30			Married - widow	0.04	0.99
	divorced	19	0.49	0.34			Married - divorced	-0.12	0.78
							Widow - divorced	-0.16	0.88
SLE	single	23	0.50	0.34	0.83	0.48	Single - married	0.08	0.90
							Married - widow	-0.05	0.99
	married	143	0.43	0.36			Widow - divorced	0.08	0.96
	widow	14	0.44	0.40			Married - widow	-0.13	0.68
	divorced	19	0.45	0.31			Married - divorced	0.01	1.00
							Widow - divorced	0.13	0.81
MEN	single	23	0.47	0.36	0.59	0.62	Single - married	0.08	0.87
							Married - widow	0.11	0.77
	married	143	0.42	0.31			Widow - divorced	0.11	0.87
	widow	14	0.32	0.23			Married - widow	0.31	0.99
	divorced	19	0.35	0.28			Married - divorced	0.03	0.99
							Widow - divorced	-0.01	1.00
ATT	single	23	0.50	0.32	0.20	0.89	Single - married	0.01	1.00
							Married - widow	-0.05	0.99
	married	143	0.50	0.35			Widow - divorced	0.05	0.99
	widow	14	0.42	0.49			Married - widow	-0.06	0.99
	divorced	19	0.46	0.41			Married - divorced	0.04	0.99
							Widow - divorced	0.10	0.98

Significance Levels: *** p <0.001; ** p <0.01; * P ≤ 0.05; + - statistical trend

The test was only relevant for the depressive mood. It appears that women living in rural areas were significantly worse at DEP (M = 0.34) than women living in urban areas (M = 0.26). It is also worth noting that the results of the Significance of Differences in Sexual Behaviour (SEX) and Sleep Disorder (SLE) scores are statistically significant.

Table 4 shows the interdependence between individual health dimensions and the education of perimenopausal women. It also presents the results of testing the significance of differentials in all dimensions of health in subgroups of women with different levels of education. One-way analysis of variance (ANOVA) was used for this purpose. As shown by the F test results, five of the nine dimensions of health have significant differences in the groups: DEP, somatic symptoms (SOM), vasomotor symptoms (VAS), sexual behaviour (SEX), and sleep problems (SLE). To find out which specific groups within education differed in terms of a given health domain, Dunnett's post-hoc T3 test was used to resist the assumption of homogeneity of variance. The test showed that women with secondary education were significantly more likely to experience depressive mood (M = 0.36) than women with higher education (M = 0.25). Similarly, in terms of somatic symptoms, women with lower secondary education rated them more negatively (M = 0.53) than women with higher education (M = 0.43). The same trend was observed in vasomotor symptoms. Women with secondary education experienced more such symptoms (M = 0.62) than women with higher education (M = 0.43). In the case of sexual behaviour, there were also significant differences only when comparing women to secondary and tertiary education. The first rated the sex life worse (M = 0.47) than women with higher education (M = 0.29).

Table 5 shows the interdependence between the individual health dimensions and the marital status of the examined women. One-way analysis of variance (ANOVA) followed by post-hoc T3 Dunnett test was used to analyse the differences between women with different marital status. A more general analysis of variance (F) shows that significant differences only occurred with depressive mood (DEP). However, after detailed analysis of the differences between the groups by post-hoc tests, it turned out that the only difference between the married and the widowed was in significance (statistical tendency), as it cannot be considered statistically significant.

In the analysis of the authors' own research, widows were more likely to experience depressive mood (M = 0.36) than married women (M = 0.27).

IV. DISCUSSION

Ovarian function and associated hormonal deficiency are responsible for the clinical manifestations that can be divided into three groups: vasomotor, somatic, and psychological symptoms [6]. Vasomotor symptoms are primarily hot flashes and excessive sweat. Hot flashes are defined as the appearance of a sudden heat stroke that includes the face, neck, and chest, often accompanied by skin redness. The effect of hot flash is a profuse sweating. These symptoms often occur during the night and in stressful situations, last from a few seconds to a few minutes and can be reversed. Hot flashes are often accompanied by cardiac arrhythmias, nausea, and anxiety. Angioedema occurs in about 25% of premenopausal women and remains the case for 75% of women after the last menstrual bleeding [7,8].

Somatic symptoms include mainly pains and dizziness, muscle pain, stiffness and arthralgia, limb numbness, hand and foot sensitization, dry skin and mucous membrane, fatigue, as well as respiratory problems such as dyspnoea [9].

Among the psychological symptoms were irritability, strong emotions, depression, and anxiety. In perimenopause, there are also disturbed concentration, decreased intellectual ability, difficulty with remembering, decreased motivation to be active. The low self-esteem also contributes to the loss of physical attractiveness and reproductive capacity. As a result of anatomical, physiological, and psychological changes, disorders in the fulfilment of sexual needs and functioning in the sphere of intimate life.

Brukwicka et al. [11] reported the following predominant menopausal symptoms: hot flashes, headaches, and insomnia. In turn, Janicka [12] states that postmenopausal women experience the most severe symptoms such as depression, somatic symptoms, memory and attention problems, and sexual dysfunction. Perimenopausal women complain about menopausal symptoms, menstrual symptoms, and low attractiveness. Jarecka [13] indicates that perimenopausal and postmenopausal women experience the highest number of menopausal symptoms compared to premenopausal women. Postmenopausal women report more symptoms such as depression, memory and attention disorders, somatic symptoms, and sexual dysfunction. Perimenopausal women, however, are more concerned about the symptoms of menopause and the decrease in attractiveness. Lewicka et al. [14] found that 62% of women have problems with

continuity of sleep and 53.5% of women do not get rest after rest at night.

Koligat et al. [15] indicate that the most severe climacteric symptoms were observed in perimenopausal women. The authors found no symptoms of anxiety in 45% of wor 49 and no depression in 73% of those in perimenopause. The analysis of Lewicka et al. [16] shows that perimenopausal mood disorders were predominant in women aged 45-50 and with basic or vocational education. More than half of the subjects had mood swings (71.20%), nervousness (72.0%), depression (57.50%), fatigue (70.0%) and concentration difficulties (56.50%). Kanadys et al. [17] found that about 40% of perimenopausal women had moderate symptoms of depression.

Santos et al. [18] report that in the group of perimenopausal women they studied, the percentage of severe symptoms was low. However, hot flashes, irritability, and sleep disorders have reached a higher intensity in relation to somatic symptoms. According to our own research, the age of perimenopausal women was associated with a lower level of health as regards vasomotor symptoms, sexual behaviour, and sleep problems. In addition, women living in rural areas and having secondary education were significantly more likely to experience depressive mood than women living in cities and having higher education. Women with secondary education experience more severe somatic, vascular, and sexual behaviour problems than women with higher education.

V.CONCLUSIONS

- Perimenopausal women experience increased vasomotor symptoms and feel physically unattractive. Quite often they also indicate problems with sleep, memory, and concentration. On the other hand, they do not feel depressed mood and do not feel anxiety.
- Age, place of residence, education and marital status determined the particular aspects of health in the group of women examined.

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